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10/001,315	10/24/2001	Gregory D. VanWiggeren	10010111-1	2348

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06/05/2003

AGILENT TECHNOLOGIES, INC.
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EXAMINER

CHANG, AUDREY Y

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/001,315

Applicant(s)

VANWIGGEREN ET AL.

Examiner

Audrey Y. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

DETAILED ACTION***Claim Objections***

- **Claims 18-19 are objected to because of the following informalities:**

(1) claim 13 recites the phrase “in second active mode the second hologram being adapted to direct light to *the second* location” wherein the *second* location being the *same* as the second location that light being directed by the *first* hologram *not at first active mode*. The phrase is confusing and indefinite. It is not clear how does the second hologram directs light to second location in its active mode when the second location is not a resultant location of active mode in first hologram. The specification as shown in figures only discuss the operations when the holograms are in their active modes, it is not clear how does the second location come about when the first hologram is not in its active mode.

(2) the phrase “directing light to the third location with the second hologram in the *first* active mode” recited in claim 18 is confusing and in contradiction to earlier part of the claim wherein in the *second* active mode the second hologram directs light to the third location. Claim 19 inherits the objection from its based claim.

Appropriate correction is required.

Drawings

- The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features recited in claim 13 wherein “in second active mode the second hologram being adapted to direct light to the *second* location” with the *second* location being the *same* as the second location that light is directed by the *first* hologram *not at first active mode* must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

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A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

- The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- **Claim 1-11 and 12-20 are rejected under 35 U.S.C. 103(a) as being obvious over the patent issued to Popovich et al (PN. 6,525,847) in view of the patent issued to De Vre et al (PN. 5,640,256).**

Popovich et al teaches a *three-dimensional projection systems* (please see Figures 18 and 19) based on switchable holographic optics, wherein the system comprises a *switchable holographic optical system* (320) that includes a *plurality of switchable holograms*. **Popovich et al** teaches that each of the holograms is switchable between a diffraction state (active state) and a non-diffraction state (passive state) upon the application of an electrical field across the hologram medium, (please see Figures 1-6). In the active state or the diffractive state each of the holograms is capable of *focusing* the incident light to a *different* focusing location or image plane along the optical axis of the switchable holographic optical system, (please see Figures 18 and 19), wherein each of the different image planes or focusing locations serve as the claimed locations of light being directed to when the holograms are in their respective active mode. In the non-diffractive state the holograms pass light as in zero order diffraction state, which is generally considered as the second location.

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This reference has met all the limitations of the claims. Popovich et al teaches that the holographic medium is a dispersed liquid crystal medium wherein the diffractive state of the recorded holographic grating is activated when the applied electrical field is zero. It does not teach explicitly that the holograms are in their active mode when non-zero electrical fields are applied to the holographic medium and it does not explicitly teach that the holographic medium is a *para*-electric holographic medium. De Vre et al in the same field of endeavor teaches a switchable hologram that is recorded in a para-electric medium such as photorefractive crystal (LiNbO₃) having refractive index controlled medium when under the application of electrical field, (please see column 5, lines 40-45). De Vre et al teaches that the recorded holographic grating is activated to have diffractive function when a non-zero electrical field is applied across the holographic medium, (please see column 9, lines 45-60). It would then have been obvious to one skilled in the art to apply the teachings of De Vre et al to modify the holographic medium of Popovich et al to use a para-electric medium with holographic grating being activated by applying non-zero electrical field as an alternative design and structure for the switchable holographic optical system. Since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

With respect to the features concerning the second hologram, Popovich et al teaches that the switchable holographic optical system (320, Figures 18 and 19) includes a plurality of switchable holograms that could either be recorded in a *single* holographic medium as shown in Figure 18 or be composed of a stack of holographic layers as shown in Figure 19. The *different* holograms are activated to focus the incident light to *different* image planes or focusing locations along the optical axis. Popovich et al teaches that a pair of common electrodes may be used to switch the holograms together or individual pair of electrodes may be used to individually switch each of the holograms, (please see column 22, lines 32-50).

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Popovich et al teaches that the switchable holographic optical system is incorporated in a three-dimensional projection system, wherein a display unit (305 in Figures 18 and 19 or 501 in Figure 22) is used to display and project a sequence of images for viewing. The display unit is optically communicated with the switchable holographic optical system such that the displayed images are focused by the holographic system to different image planes that are intended for viewing by observer (550, Figure 22). The observer is in optical communication with the optical system also. The display unit therefore serves as the input transmission medium and the observers serve as the output transmission medium.

Conclusion

- The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US patent issued to Popovich (PN. US. 6,356,366) teaches a switchable holographic light focusing device.

Contact Information

- Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 703-305-6208. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on 703-308-1637. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

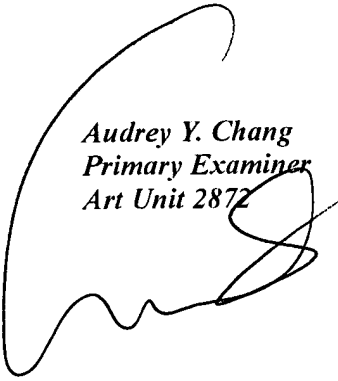
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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A. Chang, Ph.D.
May 30, 2003



*Audrey Y. Chang
Primary Examiner
Art Unit 2872*